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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/534,112   | 05/06/2005  | Peter Jozef Heirman  | HEIR3001/JEK        | 5192             |
| 23364  | 7590        | 10/24/2006           | EXAMINER            |                  |
| BACON & THOMAS, PLLC<br>625 SLATERS LANE<br>FOURTH FLOOR<br>ALEXANDRIA, VA 22314 |             |                      | BUSHEY, CHARLES S   |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1724                |                  |

DATE MAILED: 10/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/534,112

Applicant(s)

HEIRMAN, PETER JOZEF

Examiner

Scott Bushey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date ~~5-6-05~~ 5-6-05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure is objected to because legal phraseology, i.e., "comprises" should be avoided in the abstract. Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-12, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Battey taken together with either Demaree or Michalak et al.

Battey (The Figure; col. 3, lines 34-38) substantially discloses applicant's invention as recited by instant claims 1-3, 5-12, 14, and 15, except for the heat exchanger being provided within the pressure vessel with the contact means for reheating the contacted and cooled gas, and the demister means above the contact means.

Demaree (Figs. 1-3) discloses a pressure vessel including a contactor compartment (26) in fluid communication with a heat exchange compartment (30), wherein the compressed gas enters at line (58) into the contactor, the liquid passing from contactor (30) through drain (86) and through cooler (46) before being recycled to distributor (104). The pressure vessel of Demaree also includes heat exchange

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compartment (26), which provides reheating of the contacted and cooled gases prior to exit from the pressure vessel through outlet line (72). It should be noted that the tubes (68) also serve to deflect the contacted and cooled gas stream to provide for some demisting of the gas stream prior to exit from the apparatus.

Michalak et al (Fig. 3; col. 3, lines 6-14, 45-47, 52-54) disclose a pressure vessel for treating a hot, pressurized incoming gas stream, which is contacted and cooled by direct contact fluid at (14), demisted at (15) and reheated at heat exchange means (17) prior to exit from the apparatus.

It would have been obvious for an artisan at the time of the invention, to provide a heat exchanger within the pressure vessel above the contact means of Battey for reheating the contacted and cooled gas, as well as a demister means above the contact means, in view of either Demaree or Michalak et al, since such would simplify the construction of the overall device by eliminating external piping connections and their requisite energy loss through thermal exchange with the atmosphere exterior of the pressure vessel. It would have also been obvious to one having ordinary skill in the art to provide insulation means on the exterior of the pressure vessel, as suggested by the reference combination, such that the thermal exchanges that occur within the vessel do so without an undue loss of thermal energy to the ambient atmosphere, thus improving the efficiency of the device in a well known manner.

4. Claims 1-10, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster taken together with either Demaree or Michalak et al.

Schuster (The leftmost contactor in Fig. 1; col. 3, lines 6-15; col. 4, line 6) substantially discloses applicant's invention as recited by instant claims 1-10, 14, and 15, except for the heat exchanger being provided within the pressure vessel with the contact means for reheating the contacted and cooled gas.

Demaree (Figs. 1-3) discloses a pressure vessel including a contactor compartment (26) in fluid communication with a heat exchange compartment (30), wherein the compressed gas enters at line (58) into the contactor, the liquid passing from contactor (30) through drain (86) and through cooler (46) before being recycled to distributor (104). The pressure vessel of Demaree also includes heat exchange compartment (26), which provides reheating of the contacted and cooled gases prior to exit from the pressure vessel through outlet line (72). It should be noted that the tubes (68) also serve to deflect the contacted and cooled gas stream to provide for some demisting of the gas stream prior to exit from the apparatus.

Michalak et al (Fig. 3; col. 3, lines 6-14, 45-47, 52-54) disclose a pressure vessel for treating a hot, pressurized incoming gas stream, which is contacted and cooled by direct contact fluid at (14), demisted at (15) and reheated at heat exchange means (17) prior to exit from the apparatus.

It would have been obvious for an artisan at the time of the invention, to provide a heat exchanger within the pressure vessel above the contact means of Schuster for reheating the contacted and cooled gas, in view of either Demaree or Michalak et al, since such would simplify the construction of the overall device by eliminating external piping connections and their requisite energy loss through thermal exchange with the

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atmosphere exterior of the pressure vessel. It would have also been obvious to one having ordinary skill in the art to provide insulation means on the exterior of the pressure vessel, as suggested by the reference combination, such that the thermal exchanges that occur within the vessel do so without an undue loss of thermal energy to the ambient atmosphere, thus improving the efficiency of the device in a well known manner.

***Allowable Subject Matter***

5. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is 571 272-1153. The examiner can normally be reached on M-Th 6:30-5:00.

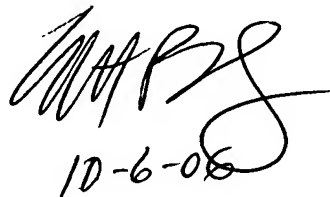
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Scott Bushey  
Primary Examiner  
Art Unit 1724

csb  
10-6-06



10-6-06